Automatic Identification System
ENCODING GUIDE

AUTOMATIC IDENTIFICATION SYSTEM (AIS) is an invaluable navigation safety radio communication device. However, its usefulness is undermined by the broadcast of inaccurate, improper or outdated data. Mariners are reminded that U.S. regulations (33 CFR 164.46) **require** that each AIS be maintained in effective operating condition which includes the accurate input and upkeep of all AIS data fields. The following is a guide on how to properly encode and upkeep AIS:

Static Data…should be manually inputted at installation and password protected — know your password, you will need it to encode your AIS

✓ **Maritime Mobile Service Identifier** (MMSI) number, **call sign**, and **vessel name** should reflect what is exactly on the vessel's official radio station license. Vessel names should **NOT** include precursors or designators, such as: F/V, M/V, MV, OSV, P/V, REC, S/V, TUG, etc. Vessel names of 20 characters or greater should **NOT** be abbreviated or truncated; except fleet vessels, which should include the segment of its name that is unique to the vessel:

MYCOMPANYFLEETBOAT 1234 becomes MYCOMPANYFLEETB 1234
MYCOMPANYFLEETBOAT ALPHA becomes MYCOMPANYFLEET ALPHA

A nameless vessel should be identified by its official state registration or documentation number preceded by 'US#':
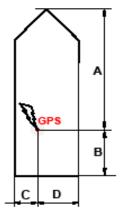
US#CA1234YZ or US#122456

If unnumbered or an associated craft (e.g. tenders, daughter vessels), then by its parent name, a dash and a numerical designator that distinguishes it amongst others:

PARENTSHIPNAME-X_n (n = 1, 2 ,3, …)

Associated craft, via the AIS message 24B call-sign parameter, shall also reflect the last 6 digits of the parent MMSI preceded an 'A', i.e. A123456

✓ **IMO Number**[1], should reflect the vessel's assigned IMO number; or absent an IMO assignment its U.S. Official Documentation Number preceded by '100', e.g. 1001234567.

[1] See www.imonumbers.lrfairplay.com/datause.aspx

✓ **Static Draft,** should reflect the actual draft of the vessel or if the actual draft is unknown or unavailable, its maximum draft.

✓ **Type of vessel**, shall reflect a vessel type denoted in Table 1 (reverse-side), which is either selected from an AIS menu or manually inputted.

✓ **Dimensions**, which are calculated in reference to the location of the vessels' position-fixing antenna and should be inputted as ABCD values (see diagram), which also denotes the overall length (A+B) and breadth (C+D) of the vessel. Other than Integrated Tug & Barges (ITB), towing vessels should not include the dimensions of the tow in this calculation. Note each ABCD value must be greater than 1 and expressed in meters **NOT** feet.

Remote Name	TEXAN
MMSI Number	366904340
Call Sign	WDB4969
Latitude	29° 20' 33.95" N
Longitude	094° 49' 36.58" W
Range	2.542 Nm
Bearing	264.8° T
COG	037.9° T
SOG	6.90 mi
Nav Status	Under Way Engine
Destination	N/A
Length	16.0 m
Beam	8.0 m
Type of Ship	Tug
Hazardous Cargo	N/A
Time Since Last Update	00h 01m 15s
Draught	0.0
ETA To Destination	N/A

Always ensure your AIS is accurate & up-to-date!

AIS

Dynamic Data…should be provided via properly installed and integrated external sensors and always be operational, accurate and continuously updating

✓ **Type of positioning source** and **accuracy** should be properly identified, e.g. GPS, GLONASS, surveyed or manual input. This same source should provide: course over ground in 1/10 degrees, speed over ground in 1/10 knots, vessel position in 1/10 seconds of latitude & longitude, and, the whether it is of low or high accuracy (i.e. greater than or less than 10 meters).

✓ **Heading** and **Rate of Turn**, as required per SOLAS Regulation V/19.2, for vessels of 150 or 50,000 gross tonnage or greater, respectively.

Voyage Related Data…should be manually inputted and updated as necessary

✓ **Navigation Status,** usually manually selected from a menu list and should reflect the actual status of the vessel, e.g. at anchor, underway using engines, engaged in fishing, etc. Always remember to change your status from anchored/moored to underway.

✓ **Destination**, should also indicate place of origination be encoded using UN[1] & U.S.[2] LOCODE or BOEMRE Block numbers in this specific format:

Origination Foreign Country Code [space] Foreign LOCODE [space]>US [space] U.S. Port LOCODE [+] U.S. Berth ID#, e.g.

BS FPO>US MIA+0Z50[3]   US#BAL+0YRX>MIA+0Z50[5]
US-SFO+0ZJ5<>0VBM[6]   US-EEZ HA 1234<>1234[5]

[1] United Nations Location Codes (UN/LOCODE) at www.unece.org/cefact/locode/service/location.htm
[2] U.S. Navigation ID codes at www.ndc.iwr.usace.army.mil/search/nav_unit_search.aspx
[3] Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) block numbers & abbreviations at www.gomr.boemre.gov/homepg/pubinfo/MapsandSpatialData.html
[4] A single equal sign (=) should be used if angle brackets '>' are unavailable
[5] 'US-' and omission of Destination Country LOCODES should be used to denote a vessel operating solely within a U.S. Coast Guard Sector; or US-EZZ for those operating solely within the U.S. Exclusive Economic Zone (EEZ).
[6] Bi-directional brackets (<>) and omission of Destination Country and Port LOCODE may be used by port vessels on routine scheduled voyages (e.g. ferries), that operate within a confined area (e.g. fleeting areas, off-shore exploration blocks), in lieu of frequent updating for each voyage/run:

✓ **Estimated Time of Arrival** (ETA) to destination, expressed in Universal Time Coordinated (GMT) not local time. Vessels on voyage to nowhere (i.e. day cruises, workboats) should use 23:59.

Text Messaging… should be short, concise, and, only to exchange pertinent navigation safety-related information

✓ AIS text messaging must be conducted in English and solely to exchange or communicate navigation safety information (for example, SECURITE); non-safety related texting, including 'TEST' messages are prohibited.

✓ Although not prohibited, it should not be relied upon as the primary means for broadcasting distress or urgent communications (for example, MAYDAY or PAN PAN). (See 47 CFR 80.1109, Distress, urgency, and safety communications).

✓ The use of abbreviations and acronyms is highly encouraged; see your Local Notice to Mariners and USA Chart No. 1 for a listing of abbreviations.

The 'Type of Ship and Cargo Type' AIS parameter is inputted as numeric code, composed of a value from the 1st digit column and a 2nd digit column, or, regional codes 100-109
The terms used are as defined in IMO SOLAS or 46 U.S.C. 2101. Blue fonts denotes amplifying text not found in the original source Table in ITU-R M.1371-4
For additional information on AIS or copies of this Guide visit www.navcen.uscg.gov/enav/ais/AISFAQ.htm

1st digit	2nd digit (1x)	Other Vessels 2nd digit (3x)	Special Craft 2nd digit (5x)	USA specific Regional Codes[1]
0 – Not available	0 – All ships of this type	0 – Fishing, i.e. commercially engages in the catching, taking, or harvesting of fish	0 – Pilot vessel	100 – Other type of U.S. commercial vessel not otherwise identified in this Table
1 – Reserved for future use	1 – Carrying DG (Dangerous Goods), HS (Hazardous Substances), or MP (Marine Pollutant), IMO hazard or pollutant category A/X; or carrying 150 or more passengers	1 – Towing, i.e. commercial vessel engaged in or intending to engage in the service of pulling or hauling along side, or any combination of pulling or hauling alongside (not pushing)	1 – Search and rescue vessels, i.e. USCG and USCG Auxiliary small boats	101 – Push-boats, vessels engaged in towing by pushing ahead
2 – WIG or Seaplanes	2 – Carrying DG, HS, or MP, IMO hazard or pollutant category B/Y; or carrying 50 or more passengers	2 – Actually engaged in towing and length of the tow exceeds 200 meters (656 ft) or breadth exceeds 25 meters (82 ft)	2 – Tugs or workboats that assist other vessels, but, do not engaged in the towing of barges or cargo	102 – Scientific, Survey or Research Vessels
3 – Other vessels, see right column (3x)	3 – Carrying DG, HS, or MP, IMO hazard or pollutant category C/Z; or carrying 12 or more passengers	3 – Engaged in dredging or underwater operations	3 – Port or fish tenders	103 – Training or School Vessels
4 – HSC or Domestic Passenger Ferry	4 – Carrying DG, HS, or MP, IMO hazard or pollutant category D/OS; or carrying less than 12 passengers	4 – Engaged in diving or salvage operations	4 – Response vessels with anti-pollution facilities or equipment	104 – Fish Processing Vessels
5 – Special Craft, see right column (5x)	5 – Reserved for future use	5 – Engaged in military operations	5 – Law enforcement vessels, i.e. USCG vessels, marine police boats	105 – Offshore Supply or Crew Vessels
6 – Passenger ships / vessels (including tenders)	6 – Reserved for future use	6 – Sailing ship or vessel (other than a Training or School vessels)	6 – Spare – for assignments to local vessels, i.e. tender or daughter craft associated with a parent vessel	106 – Pleasure craft / Recreational motorboat (open-cabin)
7 – Cargo / Freight ships	7 – Reserved for future use	7 – Pleasure craft / Recreational motorboat (closed cabin)	7 – Spare – for assignments to local vessels engaged in a regatta or marine event	107 – Pleasure craft / Recreational motorboat (other)
8 – Tanker(s) or tank vessels	8 – Reserved for future use	8 – Reserved for future use	8 – Medical transports (as defined in the 1949 Geneva Conventions and Addition Protocols) or other non-law enforcement public safety vessels (e.g. fire boats).	108 – Autonomous or Remote Controlled vessels
9 – Other types of ship	9 – No additional information	9 – Reserved for future use	9 – Ships according to RR Resolution No. 18 (Mob-83)	109 – Non-self-propelled vessels

v.2011-08-09

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[1] If your vessel is denoted in this column and codes 100-109 are unavailable in your AIS device, use code '19'